

Claims

1. A catalyst comprising palladium, at least one alkali metal compound and, if desired, one or more promoters on a porous support, obtainable by loading the porous support, which comprises a reducible metal oxide of elements of groups IIb, IVb, Vb, VIb of the Periodic Table of the Elements or ZnO or comprises a mixture of these oxides or a mixed oxide of these elements in which zinc may also be present, with at least one palladium compound, subsequently carrying out a reduction at a temperature of 300-600°C and additionally applying at least one alkali metal compound and, if desired, one or more promoters before or after the reduction.
2. A catalyst as claimed in claim 1 which comprises at least one potassium compound.
3. A catalyst as claimed in claim 1 or 2 which additionally comprises Au, Ba and/or Cd and/or their compounds as promoters.
4. A catalyst as claimed in one or more of claims 1 to 3, wherein the reducible support is TiO₂.
5. A catalyst as claimed in one or more of claims 1 to 4, wherein the reduction is carried out for a time in the range from 1 minute to 24 hours.
6. A catalyst as claimed in one or more of claims 1 to 5, wherein the reduction is carried out using gaseous or vaporizable reducing agents.
7. A catalyst as claimed in one or more of claims 1 to 6, wherein the reducing agent for the reduction

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is selected from the group consisting of H_2 , CO, ethylene, NH_3 , formaldehyde, methanol, hydrocarbons and their mixtures and mixtures of these reducing agents with inert gases.

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8. A process for producing catalysts, which comprises loading the porous support, which comprises a reducible metal oxide of elements of groups IIb, IVb, Vb, VIb of the Periodic Table of the Elements or ZnO or comprises a mixture of these oxides or a mixed oxide of these elements in which zinc may also be present, with at least one palladium compound, subsequently carrying out a reduction at a temperature of 300-600°C and additionally applying at least one alkali metal compound and, if desired, one or more promoters before or after the reduction.

9. The process as claimed in claim 8, wherein the catalyst comprises at least one potassium compound.

10. The process as claimed in claim 8 or 9 wherein the catalyst additionally comprises Au, Ba and/or Cd and/or their compounds as promoters.

11. The process as claimed in one or more of claims 8 to 10, wherein the reducible support is TiO_2 .

12. The process as claimed in one or more of claims 8 to 11, wherein the reduction is carried out for a time in the range from 1 minute to 24 hours.

13. The process as claimed in one or more of claims 8 to 12, wherein the reduction is carried out using gaseous or vaporizable reducing agents.

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14. The process as claimed in one or more of claims 8 to 13, wherein the reducing agent for the reduction is selected from the group consisting of H_2 , CO, ethylene, NH_3 , formaldehyde, methanol, hydrocarbons and their mixtures and mixtures of these reducing agents with inert gases.

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15. The use of a catalyst obtainable as claimed in any of claims 8-14 for the preparation of vinyl acetate in the gas phase from ethylene, acetic acid or oxygen or oxygen-containing gases.

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